Small-molecule kinase inhibitors: an analysis of FDA-approved drugs - DTU Orbit
(05/01/2019)

Small-molecule kinase inhibitors (SMKIs), 28 of which are approved by the US Food and Drug Administration (FDA), have been actively pursued as promising targeted therapeutics. Here, we assess the key structural and physicochemical properties, target selectivity and mechanism of function, and therapeutic indications of these approved inhibitors. Our analysis showed that >30% of approved SMKIs have a molecule weight (MW) exceeding 500 and all have a total ring count of between three and five. The assumption that type II inhibitors tend to be more selective than type I inhibitors has been proved to be unreliable. Although previous SMKI research was concentrated on tyrosine kinase inhibitors for cancer treatment, recent progress indicates diversification of SMKI research in terms of new targets, mechanistic types, and therapeutic indications.

General information
State: Published
Organisations: Department of Chemistry, Organic Chemistry
Contributors: Wu, P., Nielsen, T. E., Clausen, M. H.
Number of pages: 6
Pages: 5–10
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: Drug Discovery Today
Volume: 21
Issue number: 1
ISSN (Print): 1359-6446
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 5.76 SJR 2.008 SNIP 1.518
Web of Science (2017): Impact factor 6.848
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 6.11 SJR 2.17 SNIP 1.696
Web of Science (2016): Impact factor 6.369
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 5.62 SJR 2.09 SNIP 1.605
Web of Science (2015): Impact factor 5.625
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 5.61 SJR 1.865 SNIP 1.608
Web of Science (2014): Impact factor 6.691
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 6.04 SJR 2.02 SNIP 1.841
Web of Science (2013): Impact factor 5.964
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 5.96 SJR 1.967 SNIP 2.005
Web of Science (2012): Impact factor 6.551
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 6.05 SJR 1.928 SNIP 1.986
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1